AUSTRALIAN SOCIETY FOR LIMNOLOGY

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LIMNOLOGY NEWSLETTER

Volume 23. Number 1. April 1985

The Australian Society for Limnology is an association of over 400 people with professional or amateur interests related to Australian inland waters Since its inception in 1961 the Society has played an important role in fostering limnological work in this country. The ASL promotes liason between limnologists in academic, private and governmental institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL produces a newsletter with notes on activities, articles of general interest, book reviews and conference announcements; a Bulletin of original scientific papers and occasional Special Publications. A further publication is the Directory of Australian Limnologists.

Membership applications are welcomed; five classes of subscribing membership are available:

Ordinary Members : $15.00
Student Members : $6.00
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Membership subscriptions cover the period from 1 July to 30 June and members receive all publications. Members may also choose to receive the Australian Journal of Marine and Freshwater Research, the Australian Journal of Zoology and/or the Australian Journal of Botany at reduced rates. The subscription period for each journal is the calendar year following the year in which the subscription is paid.

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Clayton, 3168
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Editor : Ian Campbell
Water Studies Centre
Chisholm Institute of
Technology
P.O. BOX 197
East Caulfield 3145
AUSTRALIA.

Enquiries relating to membership should be directed to : Mrs M. Hart
Treasurer / Membership Officer ASL
22 Netherby Ave.
MULGRAVE 3170
AUSTRALIA

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Contents

News and Views	2.
Jolly Award	6.
Obituary : Julian Rzoska	7.
Boden Conference Report	8.
Limnology Bibliography	12.
Coming Events	16.

Deadline for the next Issue : 30 May.

News & Views

24th CONGRESS, PERTH 1985

Enclosed with this Newsletter you should find the registration form for the 24th Congress, to be held at Jarrahdale in Western Australia on the 24 and 25 August.

AUSTRIAN DAM HALTED

The Austrian High Court has granted an injunction to the World Wildlife Fund to halt work on the Hainburg dam site (see Newsletter Vol. 22 No.4). The construction of the dam would probably have resulted in the destruction of the Danube riverine forest and the Lange Lacke wetlands. A secret gevernment report which was leaked to the media pointed out that serious problems could be anticipated finding markets for the electricity which the dam will produce. The injunction will effectively delay the commencement of construction work until the end of 1985.

(source WWF News)

DAM PROPOSED FOR UPPER MURRAY

The River Murray Commission is proposing to build a reservoir on the upper Murray River according to "The Australian" (2/2/'85). Two sites are under consideration, Jingellic and Murray Gates, of these the Murray Gates site seems to be preferred since the land flooded would be national park "criss-crossed with hydro-electric powerlines and dotted with concrete constructions" while a dam at Jingellic would flood "a large area of good grazing land". The purpose of the dam would be to provide additional freshwater to "shandy up" the salty water of the lower Murray.

SPANISH WETLANDS DRYING UP

Two of Spain's most important wetlands, the Coto Donana and Las Tablas de Damiel are being affected by water shortages. Both are listed under the Convention on Conservation of Wetlands of International Importance. The problems arise from drainage of the wetlands for agricultural use combined with extraction of water for irrigation use. Between 1981 and 1983 problems have been exacerbated by drought.

(source WWF NEWS)

THE ASIAN FISHERIES SOCIETY

The Asian Fisheries Society was formed in May 1984. The Council of the Society will be organising the First Asian Fisheries Forum in May 1986 in the Philippines. Enquiries about the Society may be directed to The Secretary, Asian Fisheries Society, c/- MCC P O Box 1501, Makati, Metro Manila, Philippines.

REVIEW OF THE AWRC - WATER QUALITY MONITORING PROGRAMME IN VICTORIA

The Rural Water Commission of Victoria (previously the State Rivers and Water Supply Commission) has been performing routine surface water quality monitoring at approximately 300 sites in rivers and streams throughout Victoria since mid 1975.

The Water and Materials Science Division of the RWC has been commissioned to conduct a review of the water quality monitoring network. This review will assess statistically all the data collected to mid 1984 as part of the Australian Water Resources Council - Water Quality Assessment Programme (AWRC-WQAP), determine whether physical/chemical monitoring is an adequate indicator of surface water quality and assess the extent to which the data has been used to date or is likely to be used in the future.

In order to gauge the overall requirement for such a general physical/chemical surface water programme, a questionaire has been prepared for circulation to all past and prospective users of the water quality data.

The questionaire, or further information may be obtained by contacting Mr A.J. Schalken on (03) 508 2705 or Mr D. Welsh on (03) 508 2666.

CAMPAIGN TO SAVE FROG LEGS

The World Wildlife Fund in Germany has commenced a programme with the slogan "Lasst den Froeschen ihre Schenkel" (let the frogs keep their legs). The concern arises from the fact that over 200 million wild frogs are killed annually to supply the gourmet food market. About 70 million of these come from Bangla Desh where it is estimated they would have consumed about 100 tonnes of insects a day. The World Wildlife Fund is concerned both at the ecological impact of the removal of the frogs as well as the impact of the pesticides which must be employed to replace them.

(source WWF NEWS)

REMOTE SENSING SYMPOSIUM

The Departments of Civil and Agricultural Engineering, and Surveying at the University of Melbourne, in conjunction with the Department of Water Resources and the Victorian Society for Photogrammetry and Remote Sensing are conducting a symposium on "Remote Sensing for Resource Management" to be held at Melbourne University on Tuesday 23 April 1985. The purpose of the symposium is to outline the potential benefits to resource managers offered by remotely sensed data capture from sensors such as the Landsat series of satellites and airborne scanners.

Current use of remote sensing to applications in various disciplines such as hydrology, geology, agriculture and regional and environmental planning will be presented.

Registration is $50 and enquiries should be directed to Miss J. Wise, Dept of Civil and Agricultural Engineering, University of Melbourne, Parkville 3052. (Tel. (03) 341-6645).

NEW JOURNAL

The German publisher Paul Parey has recently announced a new journal "The Journal of Applied Ichthyology" which will be published quarterly commencing in 1985. The journal will publish original scientific papers, short communications and book reviews in the field of applied ichthyology, aquaculture and marine fisheries, ichthyopathology and immunology, ecotesting using fish, ecotoxicology as far as ichthyological questions are concerned, ichthyological basic research for development aid and the scientific fundamentals of the management of fish resources. Application-oriented fish research will be emphasized. Annual subscription price is approx. 120 DM. For further information write to :

Verlagsbuchhandlung Paul Parey, Postfach 10 64 04. D-2000 Hamburg 1, West Germany.

AAS CRITICAL OF FEDERAL BUDGET

Dr Arthur Birch, President of the Australian Academy of Science, was highly critical of the 1984 Federal budget for science. He stated that the Australian Government had a "contemptuous incomprehension of the long term aspects of science. It is only possible to raise the living standards of all sectors of the community because of the high productivity resulting from scientific discovery, applied through invention and innovation, which produces goods, services and systems surplus to the needs of the producers and operators. Without the results of science in the last 150 years, Australia would still be socially about the subsistence level of the days of Governor Maquarie. What of the next century (or twenty years)? It is the science of today which results in capabilities in twenty years time.

As one example of inept government decisions, the funding of thr Australian Research Grants Scheme is about half what it should be. The research this supports is of the creative, breakthrough type, unforseeable by government committees, and which forms the basis of future innovation. Researchers who depend on ARGS support are facing a continuing crisis.

The pity is that the sums of money required are virtually statistical errors in some other budgets. We in Australia are now busy eating our seed corn, and on behalf of my grandchildren, I protest."

FRESHWATER AQUACULTURE ASSOCIATION

The Freshwater Aquaculture Association was formed at a meeting held at the University of Queensland on March 9, 1985. The Association has three primary aims :

To disseminate knowledge on the culture of freshwater organisms in Australia by producing newsletters, organizing seminars and through other media deemed appropriate.

To identify areas in which research might benefit members' operations and to investigate avenues for investigating this research.

To provide a medium for communication between private enterprise and government on legislative and administrative problems inherent to the aquaculture industry.

The Association will hold a two day AGM/Seminar-Workshop and will produce at least four newsletters each year. Ancillary workshops and field days are also envisaged. Membership is open to anyone with an interest in aquaculture, the annual subscription for 1985 being $10. Enquiries and applications for membership should be directed to Dr Don Fielder, Department of Zoology, The University of Queensland, St Lucia 4067.

Jolly Award

The Jolly Award is presented by the Australian Society for Limnology to a person who, in the opinion of the Society, has made an outstanding contribution to Australian Limnology. The Award commemorates Hilary Jolly, a foundation member of the Society.

Members are invited to nominate persons for the 1984 Jolly Award. Nominations, which must be seconded, should be forwarded to the Chairman of the Jolly Award Committee at the address below by August 1, 1985. Nominations, which should be accompanied by a brief supporting statement, remain valid for ten years from the nomination date.

Dr P.S. Lake
Chairman, Jolly Award Committee
Zoology Department
Monash University
CLAYTON 3168

We hearby nominate .....
for the Jolly Award. He/She has been/not been informed of our nomonation.

Proposer (in print) .....

Signature.....

Seconder (in print) .....

Signature.....

OBITUARY : JULIAN RZOSKA

Limnologists around the world will mourn the passing of Julian Rzoska on December 1984. Anyone who had anything to do with the Freshwater Productivity (FP) section of the International Biological Programme (IBP) between 1965 and 1974 would have come into contact with this remarkable man.

Born in 1900 in Western Poland as a son of a village teacher, Julian Rzoska experienced several radical changes in his life. His first published scientific work was on copepods (in Polish). He attended the 5th SIL Congress in 1930 where he read a paper in German on littoral fauna. At this time he was a university lecturer in Poland but with the outbreak of World War II he was successively interned in Rumania , escaped to serve with the Polish Army in France, and fled to England following the defeat of France.

From 1940-1945 he worked with Charles Elton at Oxford on the control of rodents but with the end of he war he obtained a lecturing position at the newly created University of Khartoum. There he was instrumental in establishing the Hydrobiological Research Unit of the University, that persists to this day. Important limnological studies were carried out, many providing the basis for the book published in 1976 on the Nile which Rzoska edited in his retirement.

From 1958-1965 Julian Rzoska taught at Sir John College of the University of London and it was there that I first met him in 1961. I was paying my first visit to the United Kingdom to discuss my forthcoming research on Salvinia on Lake Kariba. I recall showing Julian Rzoska a map of the infestation of the weed on the Lake and extracting the response "My Gott : what a bludy mess!" I have felt comfortable in his presence ever since!

His appointment as coordinator of the PF program of IBP in 1965 was an inspired decision. At an age when most people retire, Julian Rzoska began what was arguably the busiest period of his life. A gifted linguist who could speak Polish, English, French, German, Spanish, Italian, Russian and Arabic, he was ideally suited to coordinate an international scientific program. The success of the PF section of IBF attested to by its list of publications was due in large measure to his efforts.

Above all, Julian Rzoska was a warm human being with a capacity to enjoy life and a well developed sense of fun. I personally owe him a great deal and I mourn his passing.

DAVID MITCHELL

Boden Report

BODEN II CONFERENCE : STREAM ECOLOGY

In the development of limnology in Australia, the emphasis has largely been on standing (lentic) water bodies. This is in spite of the facts that prior to settlement by European man rivers and streams, both temporary and perennial, comprised the dominant type of water body in Australia, that rivers and streams have been greatly modified by man for economic purposes, and that in spite of the economic use of running waters we know precious little ecologically about Australian rivers. In the past six years or so there has been an upsurge of research in stream ecology in Australia. In view of this upsurge and in view of the controversial advances in stream ecology overseas it was felt that the time was right for a conference on stream ecology in Australia.

The conference which was held at Thredbo on 6-8 February 1985 was attended by 41 scientists interested in stream ecology from Australia, New Zealand and U.S.A., covering a range of disciplines including hydrology, botany, entomology, and ichthyology. Overseas speakers at the conference were Professor Stuart Fisher and Dr N. Grimm of Arizona State University, Professor Ken Cummins from the University of Maryland and Dr Mike Winterbourn from the University of Canterbury, Christchurch, New Zealand.

In the first discussion session the theme was transport and processing mechanisms in streams. Professor T. McMahon (University of Melbourne) gave a lucid account of the hydrological attributes of Australian streams. In the ensuing discussion attempts were made to resolve the thorny question of which hydrological parameters are of most relevance to stream ecologists. Stuart Bunn (University of Western Australia) discussed organic matter processing in Australian streams pointing out some of the implications of Australian sclerophyll forests having their peak litter fall in summer and the poor understanding we currently have of organic matter transport in Australian streams, especially the transport and processing of D.O.M. (dissolved organic matter).

Professor Stuart Fisher has worked on desert streams, in particular the phenomenon of succession after flood. He gave a lively account of the production energetics of desert streams and of the adaptations shown by insects living in such grossly perturbed systems as desert streams. Dr Nancy Grimm outlined the role that nitrogen plays in regulating primary production in Arisonan desert streams. Both of these talks were particularly relevant to Australia, given that many Australian streams are arid zone streams.

New Zealand streams appear to be different from many streams elsewhere in their lack of significant proportions of "shredders", or animals consuming large particulate organic detritus. Dr Mike Winterbourn drew the conference's attention to the importance of the layer (made up of fungi, bacteria, algae, inorganic and organic matrices) that develops on stones and logs as an energy source to stream animals.

Professor Ken Cummins is a pioneer in elucidating the energy processing pathways of streams. He outlined the various patterns of litter input into streams that may occur world-wide and speculated on the ways that litter input and processing may influence the life cycles of stream insects, especially those dependent on coarse particulate organic matter. He suggested that, coupled with the effects of the timing and level of organic matter input on stream ecosystem functioning, the organic matter retentive capacity of the stream must be considered.

Dr Ian Campbell's (Chisholm Institute of Technology) talk on stream macroinvertebrates centred on life history patterns and factors controlling growth. The ensuing discssion made it clear that at present, for Australian stream insects, it is impossible to make generalizations about types of life history patterns. Angela Arthington (Griffith University) outlined the nature of trophic guilds of stream fish and the lack in Australian stream fish of three out of six guilds recognized overseas. Her talk stressed that in Australia, stream fish research has centred on the ecology of single species and has not addressed the nature of stream fish communities.

Attributes of upland streams were outlined by Leon Barmuta (Monash University) and he stressed stream community processes. The links between descriptive ecology and experimental ecology in streams were outlined and criticisms were levelled at desriptive studies from which causal mechanisms were assumed to have been validated and experimental studies on phenomena which bore little relationship to the described situations in streams. The problems of accurately assigning animals to the various functional feeding groups ("shredders", "scrapers", "collectors", etc.) were described and the effects that such difficulties may have on models of trophic organisation were stressed.

As pointed out by Dr Richard Marchant (National Museum of Victoria), Australian lowland rivers are small in international terms. Lowland rivers pose great sampling problems and are hard to model effectively because of the interactions between the river channel, the

river backwaters, and the floodplain. Using data from the La Trobe River, Dr Marchant showed that invertebrate production levels in this river were relatively high with high production of biomass ratios which were in keeping with levels from lowland streans in the Northern Hemisphere at equivalent latitudes.

The final session of the conference was concerned with the links between ecological theory and stream ecology and most of the ensuing discussion was at the community and ecosystem levels. In examining the way that much stream ecology is carried out, Professor Fisher was of the view that much of it was inductive rather than deductive in approach and he suggested that this trend should be reversed.

Some of the features which distinguish streams from other types of ecosystems were outlined by Professor Fisher. Such features include the phenomenon of transport (both lateral and from source to mouth), the great dependency of streams on other ecosystems, notably those of their catchments, and the extremely dynamic nature of the biota making it difficult to discern clear temporal and spatial patterns. A contemporary model - the River Continuum Concept- which seeks to explain patterns of energy utilization down a stream with changes in stream morphology and in the inputs and forms of organic matter was viewed in discussion to have a low predictive value and was held to offer a correlational rather than a causal explanation of longitudinal changes in energy utilization and stream biota.

Dr P.S. Lake (Monash University) addressed the difficult question of community discrimination in streams and pointed out some of the shortcomings of equating communities with taxonomic assemblages. The nature of stream communities was addressed by outlining the properties of "organismic" communities in contrast to "individualistic" communities, and of "deterministic" in contrast to "stochastic" communities. In addressing the question of the mechanisms that maintain diversity in stream communities, it became clear that none of the models used in other areas of ecology applied without drastic modification to stream communities.

There is no doubt that the conference was most successful and that many of the participants not only gained a lot of knowledgd and insights but were energized for future research. The format of the conference of having each topic introduced by a short, pithy, controversial oration followed by discussion worked extremely well in drawing out some or

the difficult problems and devising ways to solve them. There is no doubt that Australian stream ecologists were heartened by the conference and that such a conference will be of immense value in future research work. The Australian Society for Limnology is extremely grateful to Dr Boden and the Australian Academy of Science for making such a conference possible.

P.S. LAKE

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SMITH. J. D. & HAMILTON T. F. Modelling of ^{210}Pb behaviour in the catchment and sediment of Lake Tali Karng, Victoria, and estimation of recent sedimentation rates. Aust. J. Mar. Freswater Res. 36: 15 - 22

Coming Events

23 April 1985

Remote Sensing for Resource Management.

Venue : Melbourne University.

Details : Miss J. Wise, Department of Civil and Agricultural Engineering, University of Melbourne, Parkville 3052. ((03) 341 6645).

28 April - 1 May 1985.

Arctic Water Pollution Research : Applications of Science and Technology.

Venue : Yellowknife, Canada.

Details : K. Charbonneau, Conference Services Division, National Research Council of Canada, Montreal Road Laboratories, Ottawa, Ontario, Canada.

28 April - 3 May 1985

11th Federal Convention AWWA

Venue : Melbourne

Details : F.J. Carter, Secretary, AWWA, Box A232 PO Sydney South, 2001.

6-9 May 1985.

2nd International Symposium on Toxicity Testing Using Bacteria.
Venue : Banff, Canada.
Details : B. Dutka, AMD, National Water Research Centre, CCIW , PO Box 5050, Burlington, Ontario, Canada L7R 4A6.

13-15 May 1985.

Ecological Society of Australia, 6th Open Forum.
Venue : University of New England, Armidale.
Details : Jeremy Smith, Dept of Geography, University of New England, Armidale 2351, NSW.

26-30 May 1985.

International Conference on Water and Water Policy in World Food Supplies.
Venue : Texas, USA.
Details : Conference Secretary, Texas A&M University, College Station, Texas 77843, USA.

28-30 May 1985.

Environmental Risk Assessment of Chemicals.
Venue : Tokyo, Japan.
Details : Prof. S. Matsui, Faculty of Engineering, Kanazawa University, 2-40-20 Kodatsuno, Kanazawa, Japan.

28-31 May 1985.

Aquatech Asia '85 - 3rd Asian Water Technology Exhibition and Conference.
Venue : Hyatt Convention Centre, Singapore.
Details : IAWPRC Secretariat, Alliance House, 29/30 High Holborn, London WC1V 6BA, England.

4-7 June 1985.

Effects of Land Use on Fresh Waters.
Venue : University of Stirling, UK.
Details : Eric Porter, Water Research Centre, PO Box 16, Henley Road, Medmenham, Marlow, Bucks. SL7 2HD, UK.

9-15 June 1985.

5th International Congress on the Environment and Resources.
Venue : Brussels, Belgium.
Details : CICB M.B. Gills, Parc des Expositions, B-1020 Brussels, Belgium.

16-21 June 1985.

Ecological Society of America/ American Society for Limnology and Oceanography Joint Meeting.
Venue : Minneapolis, USA.
Details : Dr Duncan T. Patten, Centre for Environmental Studies, Arizona State University, Tempe, Arizona 85287, USA.

25-28 June 1985.

North American Benthological Society Annual Meeting.
Venue : Oregon, USA.
Details : Dr A.C. Hendricks, Biology Dept. Virginia Polytech., Blacksburg, Virginia 24061, USA.

7-20 July 1985.

Sixth International Seminar on Environmental Impact Assessment.
Venue : University of Aberdeen, Scotland.
Details : Centre for Environmental Management and Planning, University of Aberdeen, Scotland.

16-19 July 1985.

Estuarine and Coastal Pollution : Detection Research and Control.
Venue : Plymouth, England.
Details : Dr. P. Williamson, NERC, Polaris House, North Star Ave, Swindon, SN2 1EU, England.

4-9 August 1985.

Third International Symposium on Regulated Streams.
Venue : Edmonton, Canada.
Details : Water Quality Branch, Alberta Environment, 6th Floor, Oxbridge Place, 9820 106 Street, Edmonton, Alberta T5K 2J6, CANADA.

16-19 August 1985.

Australian Society for Fish Biology Annual Meeting.

Venue : Melbourne.

Details : Dr P. Cadwallader, Snobs Creek Hatchery, Private Bag 20, Alexandra 3714.

23-25 August 1985.

Australian Society for Limnology, 24th Annual Congress

Venue : Jarrahdale, Western Australia.

Details : Ms J. Chambers, Botany Dept, University of Western Australia, Nedlands, W.A. 6009.

26-30 August 1985.

55th ANZAAS Congress.

Venue : Melbourne.

Details : Executive Secretary, 55th ANZAAS Congress, Monash University, Clayton 3168, Victoria.

1-5 September 1985.

Second International Symposium on the Brine Shrimp Artemia.

Venue : Antwerp, Belgium.

Details : Dr. ir. E. Jaspers, Institute for Marine Scientific Research (IZWO), Prinses Elisabethlaan 69, B-8401 Bredene, Belgium.

10-13 September 1985.

Chemistry for Protection of the Environment.

Venue : Leuven, Belgium.

Details : %th International Conference of Chemistry for Protection of the Environment, c/- K. VIV, Jan van Rijswijcklaan 58, B-2018 - Antwerpen, Belgium.

10-16 August 1986

Global Connections in Ecological Theory and Practice.

Venue : State University of New York, USA.

Details : IV International Congress of Ecology, SUNY College of Environmental Science and Forestry, Syracuse, NY 13210, USA.

8 to 14 February 1987.

XXIII Congress of the International Association of Theoretical and Applied Limnology (S.I.L.)

Venue : Hamilton, New Zealand.

Details : Theme : Water, to use and enjoy. Further information will become available through Tyler.

18-24 February 1987

Fifth International Conference on Ephemeroptera.

Venue : Marysville, Victoria.

Details : Dr I. Campbell, Water Studies Centre, Chisholm Institute of Technology, East Caulfield 3145.

18-24 February 1987

Ninth International Conference on Plecoptera.

Venue : Marysville, Victoria.

Details : Dr I. Campbell, Water Studies Centre, Chisholm Institute of Technology, East Caulfield 3145.

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